Montana Wind Working Group Meeting
February 9, 2006

Paul Williamson, Errol Rice, John Etchart, Georgia Brensdal, Bill Pascoe, Brian Parsons (by telephone), Russ Doty (by telephone), Sean Micken, Ron Lehr (by telephone), Roger Hamilton (by telephone), James Carkulis

Brian Parsons with the National Renewable Energy Laboratory and the U.S. Department of Energy's Wind Powering America Program reported on the Western Governors' Association Clean Energy Plan Development. His Power Point Presentation is available by clicking on the following link. Brian included that the various Task Forces have nearly completed their work and their reports have been posted on the Western Governors' Association website, www.westgov.org. For purposes of the Western Governors' Association study and plan, clean coal is also considered to be a clean energy technology. The load growth in the West through 2020 has been assumed to be about 30GW. The amount of wind power that is likely to be developed in Montana during this period has been projected at 2100MW in the high renewable energy case. In identifying where wind power might be developed there has been a trade-off between in-state, lower value wind compared to high value wind from out-of-state as found in Montana. The most contentious debate within the Western Governors' Association effort has been over "how clean" is "clean" for coal to play in the plan. California is insisting that coal in the plan meets its new, stringent, standards including carbon dioxide sequestration. Final recommendations from the Task Forces will be considered at the Western Governors' Association meeting to be held during June in Sedona, Arizona.

The Governors' study captured most global transmission needs within the West. There will be additional local ones. Roger Hamilton has been working on Wind West Wires to expand opportunities for wind power to serve load growth in the West. This effort is modeled on a similar successful effort pursued within the Great Plains and Midwest. PacifiCorp has been doing the modeling to support these efforts. The various Task Forces have identified numerous things that could be done to promote clean energy development in their study reports including what different states might do to foster new transmission. New transmission is crucial to successfully implementing the plan. Coal interests want wind power development to help them to build transmission lines by capitalizing on the broader public support renewable generation enjoys. Wind interests would like most of the new transmission capacity. Brian promised to send the Montana Wind Working Group a link to information on an upcoming conference dealing with wind integration which will be held in Washington this April. Brian suggested Governor Schweitzer could play "peacemaker" at the upcoming Western Governors' Association meeting in Sedona since he has both coal interests and supports renewable energy. Brian indicated that the work done behind the scenes before the June Western Governors' Association meeting will be critical.

There is an effort brewing within the Energy Information Administration/National Renewable Energy Laboratory to investigate the operational issues associated with wind power development including control area issues and the amount of local wind energy penetration that could be supported by control area. This work could be very useful in

Montana where regulation capacity and other control area issues have been a major concern within the NorthWestern Energy control area.

Hal Harper offered Governor Schweitzer's perspective. He said Governor Schweitzer fought as hard as he could for the Renewable Portfolio Standard bill in Montana. He indicated the Governor is totally committed to renewable energy development. Evan Barrett is planning to attend the next meeting of the Western Governors' Association Clean Energy group. He asked that the Montana Wind Working Group make sure Evan gets the announcements for these meetings. Hal observed that coal development in Montana must be clean to garner support in Montana. Hal invited the Montana Wind Working Group's input on how to promote wind energy in Montana. Governor Schweitzer is looking at ideas to encourage "distributed" energy development. The Governor believes thermal power generation must be mixed with wind and other renewable power so the renewable fraction represents a fifth of the total power to be acceptable for export purposes. The Governor feels private industry should take the lead on power development in Montana. Governor Schweitzer would support public policy measures to improve the in-state transmission network. Hal pointed out that 300 to 700 more MW of power generation could be moved on the 500kv line with marginal new investment based on Bonneville estimates. Hal reported that Representative Alan Olson's Transmission Infrastructure Authority bill has been requested again by the Interim Energy and Telecommunications Committee. Hal requested Van Jamison, the facilitator of the Montana Wind Working Group, to facilitate information sharing and ideas the Montana Wind Working Group might have on how to promote new transmission. The group acknowledged that the people who get transmission lines built first will preclude others from accessing the fastest growing load centers in the West; everyone wants to sell to California and whoever can get there fastest will win the largest market share.

Bill Pascoe identified that the Wyoming Infrastructure Authority has been a very positive initiative. He pointed out that relative to other components of retail power rates transmission is cheap. The accessing clean future energy supplies in the future will depend upon efficient and coordinated interstate permitting and facility siting decisions. Bill reported that Texas is building new transmission to access wind power ahead of having a specific wind energy project. He said Colorado is also looking at a "rate recovery" method for promoting new transmission in windy areas. Bill observed that power imports and exports are a delicate balance that can swing quickly with significant consequences. Bill suggested power produced in Montana is NOT trapped; Montana's power imports/exports relative to transmission is reasonably much balanced. Bill indicated new transmission line proposals are focusing on new generation projects rather than existing ones. He told the Wind Working Group that Great Northern has first position on the 500kv transmission line upgrade, but if they don't go ahead others in the transmission queue could take advantage of this opportunity. Bill indicated Renewable Energy Credit trading may accelerate renewable energy power development in Montana and asked to have a report on WREGIS placed on a future Wind Working Group meeting agenda. He would like to learn how WREGIS is envisioned to work. The Wind Working

Group should also monitor NorthWestern Energy's position on participation in Grid West.

The Montana Wind Working Group discussed its future mission and purpose. The Montana Wind Working Group has successfully met a significant number of the goals it originally set for itself. The Group indicated that its past more narrow goals were intended to satisfy local market needs for bulk renewable energy generation rather than smaller wind applications. At its inception, the Montana Wind Working Group chose to defer small wind applications to the Montana Renewable Energy Association to avoid duplication. The Group thought maybe some more could be done to enhance the local markets for wind power, but we need to address export market issues to expand the wind industry in Montana. Developing a robust wind power generation industry including export sales of wind generated power has always been viewed by the Wind Working Group as necessary to attracting blade, turbine and other wind manufacturing to Montana. The Montana Wind Working Group acknowledged that the key to expanding wind power exports and expanding wind energy business opportunities in Montana is transmission, transmission, transmission. Finding ways to encourage new transmission and upgrading transmission through windy areas of Montana was identified as a key future objective for the Montana Wind Working Group. Bill Pascoe indicated he thought the Montana Wind Working Group should work to promote a Transmission Authority. It could be scaled back from some of the past proposals. Bill identified that a Transmission Authority sends a positive message, serves as a central contact and catalyst for transmission, and offers a little seed money to get things started. Bill suggested the least important component of a Transmission Authority and the most contentious is bonding authority.

Paul Williamson indicated that Larry Miles has a two bladed, downwind, .75MW turbine design and is looking for investment capital to manufacture them. Paul suggested he would move to Montana if he could find Montana money to help underwrite his venture. Paul felt the Montana Wind Working Group should think about how Montana might make investment capital available for this kind of endeavor.

John Etchart recommended the Montana Wind Working Group should explore and exploit any synergies that might exist between wind and coal development. Carbon dioxide emissions have emerged as a major issue confronting coal-fired generation. He felt the Montana Wind Working Group should proactively work with the coal industry to try to resolve this impediment and build a bridge linking wind and coal power producers. This might include promoting carbon trading schemes whereby wind generators are able to offer carbon offsets to coal and public policy support for using carbon dioxide to produce high carbon products such as carbon composite materials which a increasingly been substituted for steel and other construction materials. Members of the Group felt coal gasification technologies might be adapted to accomplish this. Currently, carbon composites are produced using petroleum feedbacks.

To address control area and other operational issues associated with expanded wind power development, the Montana Wind Working Group committed to identify and promote new and/or innovative firming and regulation strategies, e.g., using the federal hydroelectric dams and other opportunities.

The Montana Wind Working Group also committed itself to promoting wide spread "community" wind development, utilizing existing public policies, such as the

Clean Renewable Energy Bonds created through the Energy Policy Act of 2005 and developing models that can be replicated across the State. Russ Doty indicated that the first set of Clean Renewable Energy Bonds has been solicited and information about them should be disseminated through Montana Association of Counties and the League of Cities and Towns. Those authorized to issue Clean Renewable Energy Bonds have 5 years to actually use the bond funding so Montana local governments could apply now and still have time to develop and construct wind projects.

The Wind Working Group committed to continue its public education efforts and expand our capabilities to get information to all interested parties.

Roger Hamilton, Wind West Wires reported on transmission initiatives going on within the Western Interconnect. He suggested that the Rocky Mountain Area Transmission Study is the most relevant from Montana's perspective. He reported that NTAG has been looking at low-cost upgrades rather than major new transmission. He also observed that California, Washington, and Oregon have adopted public policies discouraging coal-fired power imports and creating market opportunities for wind and other renewable power generation.

Ron Lehr, American Wind Energy Association, suggested the Western Governors' Association website, www.westgov.org, houses the overarching transmission policy agenda for the Western Interconnection. In addition, individual utilities' long-term plans for transmission upgrades and enhancements for reliability will also assist wind development. There has been curtailment issues associated with west Texas wind development. Ron observed that transmission takes longer to construct than the wind plant development, so building transmission through windy areas ahead of having specific wind power projects is sensible. This is akin to "field of dreams", build the transmission and wind projects will come. Colorado is looking at just such an approach. Colorado would require utilities to develop a plan and seek a Certificate of Public Necessity to build the transmission associated with their plan. This would address the "chicken and egg" phenomenon we confront and take a calculated risk that an area will build out its wind resource potential if transmission is provided. The Colorado analysis starts and properly should start by asking "What is best for the ratepayers?". Texas has adopted a renewable energy zoning approach to identify where renewable development opportunities exist and transmission will be needed to exploit available renewable power potential and to satisfy the Texas Renewable Portfolio Standard. Ron suggested that where the transmission/generation dilemma is concerned, generation is the dog and transmission is the tail. He observed the tail, probably, shouldn't be wagging the dog. Ron reported that the Minnesota Pubic Service Commission has adopted a renewable energy set aside for capacity on transmission lines within their state. The Minnesota Commission has asked the Federal Energy Regulatory Commission to respect their state set-aside for wind and it has held together well so far. This is one way to help wind power projects gets around the transmission queue.